

REMARKS

Claims 1-67 are currently pending in this application. Claims 1, 18, 35, 39, 42, 54 and 57 are currently amended.

Applicant thanks the Examiner for withdrawing the finality of the Office Action issued on July 25, 2006, and for issuing the present, non-final Office Action. Applicant also appreciates the Examiner's invitation to confer to discuss the allowability of the amended claims. Applicant will call the Examiner to schedule a conference to discuss the allowability of the claims after the Examiner has an opportunity to consider Applicant's arguments in the present response.

The Double Patenting Rejection is Premature

The Examiner appears to have provisionally rejected claims 1-67 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6-10, 16-26 and 29-67 of co-pending U.S. Patent Application No. 09/872,332 (Docket Number 700135.434). Applicant notes that although a Notice of Allowance has issued in the co-pending application 09/872,332, the claims in that case recently were amended by the Examiner, and the application has not yet issued as a patent. Accordingly, now that all pending claims in this application are otherwise in condition for allowance, as discussed in more detail below, Applicant respectfully requests that the Examiner withdraw the obviousness-type double patenting rejection and allow this application to issue. See M.P.E.P. § 804(I)(B)(1). Applicant will consider whether a terminal disclaimer is appropriate in the event that one of the applications issues in view of the claims presented at that time.

Claims 1-50 and 53-67 Are Not Rendered Obvious by Aversa in view of Bruck

The Examiner rejected Claims 1-48, 50 and 53-67 under 35 U.S.C. § 103(a) as being unpatentable over Aversa et al., Load Balancing a Cluster of Web Servers, Technical Report BUCS-TR-1999-01, in view of U.S. Patent No. 6,801,949 issued to Bruck et al ("Bruck"). Applicant notes that paragraph 5 of the Office Action of January 31, 2007, does not list all of the claims that the Examiner appears to have rejected as rendered obvious over Aversa

in view of Bruck. The Examiner's detailed arguments suggest that Aversa in view of Bruck also serves as a basis for his rejection of claim 49, and Applicant has responded accordingly.

Applicant respectfully traverses the Examiner's rejections.

Independent claim 1 as amended recites, "a first computing device comprising: a first physical port; and a second physical port; and configured to: receive, from a first network coupled to the first port, an initialization packet originating from a client ... selectively output the request packet to the second computing device, wherein request packets selectively output by the first computing device are output through a second network logically separate from the first network and coupled to the second port." The Examiner concedes that Aversa does not teach, suggest or motivate a first network coupled to a first port and a second network coupled to a second port, and the second network being logically separate from the first network. Without citing another reference, the Examiner first contends it would be obvious to use two separate networks to connect the servers in Aversa because this would "reduce bottlenecking by not requiring one server to act as a router for all the other servers." Office Action, paragraph beginning at the top of page 5. The Examiner misunderstands Aversa, which already distributes requests over the servers in the cluster, and uses multiple servers to do so (sometimes Aversa uses a single server). In fact, in Aversa multiple servers are already configured to distribute routing between the servers. Adding a second network would not change the number of requests received by (or rerouted by) any of the individual servers in Aversa, and thus would not eliminate the bottleneck the Examiner cites as allegedly providing the motivation for adding additional networks to Aversa. As previously stated by Applicant, the Examiner's logic is flawed because using two networks does not necessarily eliminate one server acting as a router; it makes routing more efficient and, in Applicant's case, makes it easy for a server to distinguish between an originally received packet and a redistributed packet. See Applicant's specification at page 52. Adding additional networks does not serve the function of reducing a server as a bottleneck. Further, Aversa teaches away from the claimed second port and second network because Aversa specifically requires other means (*i.e.*, IP-IP encapsulation) to distinguish between packets received from a client and rerouted packets. See Aversa, § 3.1, second paragraph. Thus, contrary to the Examiner's assertion, one would not be motivated to add a

second network to Aversa to reduce server bottlenecks. The Examiner also appears to be impermissibly relying on hindsight reasoning.

The Examiner then points to the external subnet, the internal subnet 2 and the internal subnet 3 of Figure 3 of Bruck for “three logically separate networks which carry three separate types of information.” Office Action, paragraph beginning on page 5 and continuing to page 6. As an initial matter, Bruck teaches away from Aversa (and from the claims) because Bruck handles distribution of client requests to hosts using an additional layer of servers between the client and the hosts to handling virtual IP addressing. The networks of Bruck to which the Examiner points connect this additional layer of servers between the client and the host server. Aversa, in contrast, employs one or more host servers configured to handling distribution of client requests without requiring an additional layer of intelligent routers. In other words, Aversa teaches eliminating a layer of computing devices in the client-host session while Bruck teaches in the other direction – adding a layer of servers. Thus, one would not be motivated to combine Aversa and Bruck. Further, and as previously stated by Applicant, Bruck does not teach, suggest or motivate that the external subnet, the internal subnet 2 and the internal subnet 3 of Bruck carry three separate types of information, and the Examiner does not address this point in his response to Applicant’s arguments. See Office Action, paragraphs 29-34. The distributed servers in Bruck receive packets from users and host machines addressed to virtual IP addresses associated with the distributed servers. There is no suggestion in Bruck that any of these networks are used to selectively output request packets from one of the distributed servers of Bruck to another distributed server. To the extent that Bruck addresses redistribution, the redistribution is accomplished by reassignment of virtual IP addresses assigned to the servers. Therefore, Bruck does not teach, suggest or motivate what the Examiner asserts. Applicant invites the Examiner to show where Bruck supports his assertions.

Thus, Aversa, alone or in combination with Bruck, does not teach suggest or motivate “a first computing device comprising a first port and a second port and configured to: receive, from a first network coupled to the first port, an initialization packet originating from a client ... selectively output the request packet to the second computing device, *wherein request packets selectively output by the first computing device are output through a second network*

logically separate from the first network and coupled to the second port” as recited in claim 1 (emphasis added). Accordingly, claim 1 is allowable.

Independent claim 18, as amended, recites, “[a] method performed by a first computing device ... coupled to a first network via a first physical port and coupled to a second network via a second physical port, the first and second networks being logically separate, comprising: receiving, through the first port, an initialization packet originating from a client ... selectively outputting the request packet to the second computing device for performing an operation in response to the request packet, wherein request packets selectively output by the first computing device are output through the second port.” The Examiner relies on the analysis he applied to claims 1 through 17 to reject claim 18. As discussed above, Aversa, alone or in combination with Bruck, does not teach, suggest or motivate “wherein *request packets selectively output* by the first computing device *are output through the second port*,” as recited in claim 18 (emphasis added). Accordingly, claim 18 is allowable.

Independent claim 35, as amended, recites, “[an] intelligent network interface device, comprising: a first physical port for receiving an IP request packet from a client over a first network; and a second physical port for transmitting the received IP request packet over a second network that is logically separate from the first network; and a processor that is structured to: maintain a state information table; and selectively transmit the received IP request packet to a second intelligent network interface device based at least in part on the state information table, so that the second intelligent network interface device causes a response IP packet to be sent transparently to the client, wherein selectively transmitted request packets transmitted by the processor are transmitted through the second port.” The Examiner relies on the analysis he applied to claims 1 through 17 to reject claim 35. For the reasons discussed above, Aversa, alone or in combination with Bruck, does not teach, suggest or motivate “wherein selectively transmitted request packets transmitted by the processor are transmitted through the second port,” as recited in claim 35 (emphasis added). In addition, Aversa and Bruck do not teach suggest or motivate “[an] intelligent network interface device, comprising ... a processor that is structured to: maintain a state information table; and selectively transmit the received IP request packet.” The Examiner argues only that a network interface *card* is inherently disclosed in

Aversa because Aversa connects to a network. Applicant traverses this contention, as a network interface card is not inherent in a network connection. Assuming for the sake of argument that Aversa discloses a network interface card (it does not), there is no teaching, suggestion or motivation in Aversa, alone or in combination with Bruck, for the recited network interface card comprising the recited processor. Accordingly, claim 35 is allowable.

Independent claim 39, as amended, recites, “a plurality of servers; a first network to receive client requests and coupled to a first server of the plurality of servers; a second network logically and physically separate from the first network, configured to redistribute received client requests ... and a third network logically and physically separate from the first and second networks, configured to transmit synchronization information ... wherein the first server of the plurality of servers is configured to selectively redistribute a client request received via the first network to a second server in the plurality of servers ... wherein redistributed requests are redistributed through the second network.” The Examiner extends the analysis he applied to claims 1-18, asserting without support that Aversa teaches a third network (LAN), to reject claim 39. As discussed above, Aversa, alone or in combination with Bruck, does not teach, suggest or motivate “the first server of the plurality of servers is configured to selectively redistribute a client request received via the first network to a second server in the plurality of servers ... wherein redistributed requests are redistributed through the second network,” as recited. Moreover, the Examiner cites no support for his conclusory statement that Aversa discloses a third network configured to transmit synchronization information. See Office Action, Paragraph 21. Also, Bruck does not teach suggest or motivate “a third network ... configured to transmit synchronization information.” The servers in Bruck receive packets from users and host machines through internal subnet 1 and internal subnet 2 based upon virtual IP addresses. There is no teaching or suggestion to use one of these subnets for transmitting synchronization information. As discussed above, Aversa discloses only a single network coupling the servers together. Accordingly, claim 39 is allowable.

Independent claim 42 recites, “when a client request packet is received at a first physical port coupled to a first network, selectively generating, based at least in part on the maintained state table, a first type of network packet for transmission to a client through the first network or a second type of network packet for transmission to another processor residing in a different one of the plurality of servers at a second physical port coupled to a second network that is logically separate from the first network.” The Examiner appears to indirectly rely on the analysis he applied to claims 1-17 to reject claim 42. See Office Action, paragraphs 24 and 33. For the reasons set forth above, Aversa, alone or in combination with Bruck, does not teach, suggest or motivate “when a client request packet is received at a first port coupled to a first network, selectively generating, based at least in part on the maintained state table, a first type of network packet for transmission to a client through the first network or a second type of network packet for transmission to another processor residing in a different one of the plurality of servers at a second port coupled to a second network that is logically separate from the first network,” as recited in claim 42. Accordingly, claim 42 is allowable.

Independent claim 46 recites, “means for transmitting the second type of packet to another server in the server farm, wherein the means for transmitting the second type of packet bypasses the means for receiving packets from the global network.” There is no reason given in the body of the Office Action as to the basis for rejecting claim 46. In the Response to Arguments, the Examiner points to the global computer network and appears to argue that Aversa discloses bypassing the global computer network when transmitting the second type of packet. Office Action, paragraph 34. The problem with the Examiner’s analysis is that Aversa discloses receiving client request packets through the global computer network and the LAN. The LAN of Aversa is *not* bypassed because all packets (regardless of type) transmitted by a server in Aversa are transmitted through the LAN. Thus, Aversa and/or Bruck, alone or in combination, do not teach, suggest or motivate “means for transmitting the second type of packet to another server in the server farm, wherein the means for transmitting the second type of packet bypasses the means for receiving packets from the global network,” as recited. Accordingly, claim 46 is allowable.

Independent claim 49 recites, “a second computer system having a network interface card that is structured to: receive an initialization packet originating from a client; output a response packet to the client to set up a connection over a network; receive a request packet originating from the client directed to the connection; and based on at least a state of at least one of the first computer system and the second computing system, selectively output the request packet to a network interface card of the first computer system thereby migrating the connection to the first computer system, wherein the network interface card of the second computer system selectively outputs the request packet to the network interface card of the first computer system without using IP-IP encapsulation.” The Examiner appears to admit that Aversa, alone or in combination with Bruck, does not teach, suggest or motivate “the network interface card of the second computer system selectively outputs the request packet to the network interface card of the first computer system without using IP-IP encapsulation,” as recited. See Office Action, paragraph 28. The Examiner’s other basis for rejecting claim 49 is addressed below. Accordingly, claim 49 is allowable.

Independent claim 54, as amended, recites, “a first network configured to receive client packets; a second network logically and physically separate from the first network and configured to redistribute the received client packets; and a third network that bypasses the first network and the second network and is configured to transmit server farm synchronization information.” The Examiner appears to rely on his analysis applied to claims 1-17 to reject claim 54. As discussed above, Aversa and/or Bruck, alone or in combination, do not teach, suggest or motivate “a first network configured to receive client packets; a second network logically and physically separate from the first network and configured to redistribute the received client packets; and a third network that bypasses the first network and the second network and is configured to transmit server farm synchronization information,” as recited. Accordingly, claim 54 is allowable.

Independent claim 57, as amended, recites, “receiving a client packet through a first network; selectively redistributing the received client packet through a second network that is logically and physically separate from the first network” The Examiner relies on his analysis regarding claims 1-17 to reject claim 57. As discussed above, Aversa and/or Bruck,

alone or in combination, do not teach, suggest or motivate “receiving a client packet through a first network; selectively redistributing the received client packet through a second network that is logically and physically separate from the first network,” as recited. Accordingly, claim 57 is allowable.

Claims 2-17 depend from claim 1, and are therefore allowable at least by virtue of their dependencies. Claims 19-34 and 53 depend from claim 18, and are therefore allowable at least by virtue of their dependencies. Claims 36-38 depend from claim 35, and are therefore allowable at least by virtue of their dependencies. Claims 40 and 41 depend from claim 39, and are therefore allowable at least by virtue of their dependencies. Claims 43-45 depend from claim 42, and are therefore allowable at least by virtue of their dependencies. Claims 47 and 48 depend from claim 46, and are therefore allowable at least by virtue of their dependencies. Claim 50 depends from claim 49, and is therefore allowable at least by virtue of its dependency. Claims 55 and 56 depend from claim 54, and are therefore allowable at least by virtue of their dependencies. Claims 58-67 depend from claim 57, and are therefore allowable at least by virtue of their dependencies.

In addition, dependent claims 12 and 29 recite, “[a data structure including] at least one start sequence number, at least one current sequence number, and at least one acknowledgement sequence number.” The Examiner merely contends that sequence numbers were known, and reasons that it would have been useful and therefore obvious to include the specified sequence numbers in a data structure. Applicant traverses this contention. The Examiner points to no motivation anywhere to include the specific sequence numbers in a data structure, and does not even explain why the knowledge that sequence numbers exist would have suggested that including them in a data structure would be “useful.” He merely asserts that it “would make sense” for encryption purposes and to provide a reliable transport protocol for web documents. These assertions do not follow from the mere fact that sequence numbers exist. Accordingly, Applicant respectfully submits that claims 12 and 29 are allowable for the additional reason that Aversa, alone or in combination with Bruck or the existence of sequence numbers, does not teach, suggest or motivate a data structure including “at least one start

sequence number, at least one current sequence number, and at least one acknowledgement sequence number,” as recited.

Dependent claims 17 and 34 recite a data structure including an IP address with “a UDP port.” The Examiner contends that the existence of some web servers using UDP ports would render it obvious to rely upon the UDP protocol for a server. Applicant traverses this contention and submits that it does not follow that it would not have been obvious to include in the recited data structure an IP address with a UDP port, and respectfully requests the Examiner to provide prima facie evidence of same.

Applicant also notes that the Examiner has incorrectly asserted that Applicant failed to seasonably challenge the Examiner’s assertions of what is “well known” in the art. See paragraph 36 of the Office Action. As an initial matter, Applicant in fact requested documentary evidence for the Examiner’s assertions in the response to the first Office Action of August 28, 2004. See Amendment filed February 28, 2005, page 14. The Examiner has not provided any reason why Applicant’s request for documentation was insufficient. Moreover, assuming *arguendo* that the Examiner’s unsupported assertions are true, the mere fact that something is in the prior art does not provide a motivation to combine it with and/or modify another reference, particularly where, as here, the references teach away from each other.

In any event, the Examiner has made several conclusory observations, which the Examiner fails to support with citations and which Applicant again respectfully traverses, as it is the Examiner’s burden to provide evidence of these observations in the art. With regard to claims 2 and 19, Applicant again respectfully traverses the Examiner’s contention that a network interface *card* is inherent in a computing device coupled to a network. With regard to claims 10 and 27, as well as the claims that depend from claims 10 and 27, Applicant respectfully traverses the Examiner’s contention that the existence of sequence numbers would render it obvious to establish a data structure including a group of sequence numbers. With regard to claims 36-41, 44, 48, and 54-66, Applicant again respectfully traverses the Examiner’s apparent contention that reducing bottlenecks would teach, suggest or motivate the use of a third port/network for synchronization traffic.

Claim 49-52 Are Not Rendered Obvious by Aversa in view of Joffe

The Examiner has rejected Claims 49, 51 and 52 under 35 U.S.C. § 103(a) as being unpatentable over Aversa in view of Bruck and U.S. Patent No. 6,185,619 issued to Joffe et al ("Joffe"). Applicant has assumed, for purposes of expediting prosecution, that the Examiner intended to reject claim 50, which depends upon claim 49, on this basis as well. Applicant previously traversed the Examiner's argument that the combination of Aversa, Bruck and Joffe rendered claims 49, 51 and 52 obvious. The Examiner did not respond to Applicant's arguments in the previous or in the current Office Action. Hence, Applicant continues to respectfully traverse the Examiner's rejections.

Independent claim 49 recites, "[an] information processing system, comprising: a first computer system; and a second computer system having a network interface card that is structured to: receive an initialization packet originating from a client; output a response packet to the client to set up a connection over a network; receive a request packet originating from the client directed to the connection; and based on at least a state of at least one of the first computer system and the second computing system, selectively output the request packet to a network interface card of the first computer system thereby migrating the connection to the first computer system, wherein the network interface card of the second computer system selectively outputs the request packet to the network interface card of the first computer system without using IP-IP encapsulation."

The Examiner appears to presume, without expressly stating, that Aversa teaches, suggests or motivates (or inherently discloses) not only a network interface card, but a network interface card "structured to ... selectively output the request packet," as recited. Applicant respectfully submits that there is no such teaching, suggestion or motivation in Aversa. Further, the Examiner admits that Aversa does not teach, suggest or motivate not using IP-IP encapsulation. The Examiner points to Column 12, lines 50-55 of Joffe as supplying the missing teaching and apparently to Column 3, lines 35-40 as supplying the motivation to combine the references. The Examiner also cites to Bruck, but does not provide any reasoning regarding the combination of Bruck with Aversa and/or Joffe.

As a preliminary matter, the Examiner has not identified how to combine Aversa and Joffe (or with Joffe and Bruck) to achieve the embodiment recited in claim 49 or identified what corresponds to the claimed first and second computer systems. The Examiner cites to Column 12, lines 50-55 of Joffe, where forwarding a request packet is mentioned, but where no details are provided regarding any process for forwarding the packet. The description of Figure 4C at Column 13, line 56 through Column 14, line 22 indicates the “relaying takes place at the IP level,” but does not provide an explanation of how the relaying occurs. There is no suggestion in Joffe to omit the use of IP-IP encapsulation techniques as claimed. Rather, to the contrary, there is explicit reference to “IP tunneling techniques.” See Joffe, column 9, lines 53-56. IP tunneling refers to IP-IP encapsulation. See RFC 2003, Introduction. (A copy of RFC 2003 is attached to a previously filed Supplemental Information Disclosure Statement.) Thus, Joffe teaches away from the recited language “without using IP-IP encapsulation.” In addition, in Joffe the relaying is done by a front-end component 360, not a network interface card as recited in claim 49. Front-end component 360 is described as software executed by a front-end server 212. See Figure 4A of Joffe. Further, Column 3, lines 35-40, pointed to by the Examiner as providing motivation, does not provide any specific motivation to combine anything. It is nothing more than a general statement that “what is needed is a system that automatically selects an appropriate server.” Thus, Joffe does not teach, suggest or motivate “without using IP-IP encapsulation,” contrary to the Examiner’s assertion. Accordingly, Applicant respectfully submits that claim 49, as well as claims 50-52 that depend from claim 49, are not anticipated or rendered obvious by Aversa, alone or in combination with Joffe and/or Bruck.

Conclusion

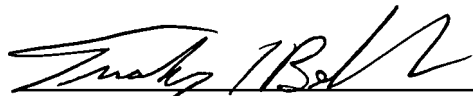
Therefore, for these reasons and others, claims 1-67 are not anticipated or rendered obvious by Aversa, alone or in any combination with Bruck and Joffe. Applicant appreciates the Examiner’s invitation to contact the Examiner to discuss the allowability of the amended claims. Applicant will call the Examiner to schedule a conference to discuss the allowability of the claims after the Examiner has an opportunity to consider Applicant’s amendments and arguments in the present response. Accompanying this Amendment is a Fourth

Request for Telephone Interview in the event the Examiner does not agree that the claims are allowable over the cited references.

In closing, Applicant respectfully requests the Examiner to reconsider this application and its early allowance. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

A handwritten signature in black ink, appearing to read "Timothy L. Boller", is written over a horizontal line.

Timothy L. Boller

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TLB:jms

Enclosure:

Applicant Initiated Interview Request Form

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